

U.S. Must Enhance Investment in Research and Education

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Given

our nation's current economic uncertainty, some policy-makers are calling for across-the-board federal spending cuts to improve our nation's economy. To achieve real economic improvement and maintain our competitive global standing, we would be better served by adopting a far different approach. What our nation truly needs is a recommitment to enhancing our investment in research and education. Without this recommitment, the United States stands to lose the innovative leadership upon which the most powerful and successful economy on earth has been built.

In 1945, Vannevar Bush, director of the Office of Scientific Research and Development, wrote the famous report "Science, The Endless Frontier" - arguably the starting point for the government's plan for investment in our nation's intellectual infrastructure. Major investments in mathematics, science and engineering that followed Bush's essay created the human and intellectual capital underpinning the key technologies and businesses that now define our age. The technologies of today - the Internet, GPS, satellite communications - have their roots in the basic research fostered by the post-war efforts of Bush and his many colleagues.

While federal research funding has grown in dollar terms, it has shrunk as a share of our gross domestic product. It is now half of what it was in 1970. From 1980 to 2003, U.S. exports of high-tech products declined from 31 percent to 16 percent of the world share. The U.S. private sector exceeds federal investments, providing more than 68 percent of all domestic R&D, which results in narrowly focused research aimed at short-term problems.

Congress has tried to address this shortfall by passing and funding the America COMPETES Act, which seeks to double government science funding over the next decade. However, during the 2008 budget process, the White House demanded that Congress stick to the administration's 2008 budget cap in its final catch-all spending bill, resulting in serious cuts to science and research programs. After inflation and excluding earmarks (local projects funded with federal tax dollars) the Department of Energy's Office of Science, the National Science Foundation and the Department of Defense didn't receive enough money to cover operational costs.

Recent cutbacks in funding for high-energy physics have led to hundreds of layoffs at national laboratories across the country. Further, the United States reneged on a \$160 million commitment to the International Thermonuclear Experimental Reactor, reinforcing the view that America is an unreliable partner on international projects.

In light of the high stakes, we need to change course and renew our commitment to basic science and education. We have systematically under-invested in education since the 1980s, justifying it as sound economics. But shortchanging a pipeline of future innovators further undermines our intellectual infrastructure and our ability to address a changing world.

We are falling behind as other nations have taken the U.S. innovation model and emulated it to great effect. A look at South Korea, Singapore, China and India shows what a focused national program of investment in basic research can do to raise the standard of living of a nation's people.

The proposed fiscal year 2009 budget is encouraging. It would begin to put the nation on the right course by reversing years of flat funding with a 19 percent increase for science at the Department of Energy; a 13 percent increase for the National Science Foundation; and a 6 percent increase for the National Institute of Standards and Technology.

Now we must do what is right for our nation by enacting the spending plan into law and fully funding the America COMPETES Act. We should also make the R&D tax credit permanent. This credit supports the technological innovations that create and preserve quality U.S. jobs. After all, the jobs of tomorrow depend on the discoveries of today.

Let it be our next president's legacy to focus on rebuilding our intellectual infrastructure, which is the foundation of the 21st century economy. Now is the time to properly resource and reinvigorate the entrepreneurial spirit that defines Americans.

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